Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A receiver for estimation and compensation of phase imbalance or gain imbalance, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the receiver comprising:

~~means for estimating~~ a circuit that estimates the phase imbalance or gain imbalance prior to symbol synchronization using ~~at least one of~~ a first value related to a cross correlation of an uncompensated I component and ~~a~~ an uncompensated Q component of an incoming I/Q modulated signal~~, a second value related to a cross correlation of a compensated I component and a compensated Q component of the modulated signal, and a third value related to a square of the compensated I component and a square of the compensated Q component of the modulated signal~~; and

~~means for compensating~~ a circuit that compensates the I and Q components of the incoming I/Q modulated signal to provide compensated I and Q components for symbol synchronization.

2. (Currently Amended) The receiver according to claim 1, wherein the first value is a ratio between a cross correlation of said I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, ~~wherein the~~ and further comprising the circuit that estimates the phase or gain imbalance using a second value that is a ratio between ~~the~~ a cross correlation of ~~the~~ compensated I and Q components and a square root of a product between a mean value of the square of the compensated I component and a mean value of a square of the compensated Q component, and ~~wherein the~~ further using a third value that is a ratio between the mean value of the square of the compensated Q component and the mean value of the square of the compensated I component.

3. (Currently Amended) The receiver according to claim 1, wherein the ~~means for estimating~~ circuit that estimates the phase imbalance or gain imbalance before synchronization comprises a low pass filter for low pass filtering the signals.

4. (Currently Amended) The receiver according to claim 1, where the ~~means for compensating~~ circuit that compensates the I and Q components of the incoming I/Q modulated signal includes ~~means for compensating~~ a circuit that compensates the phase imbalance or gain imbalance before synchronization based on at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio, wherein the second ratio is a ratio between a cross correlation of said I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component, and wherein the fourth ratio is a ratio between the mean value of the square of the Q component and the mean value of the square of the I component.

5. (Previously Presented) The receiver according to claim 1, wherein the receiver comprises a WCDMA (UMTS) receiver and wherein a feed-forward scheme or a feed-back scheme is established in the receiver.

6. (Previously Presented) The receiver according to claim 1, wherein the estimation of the phase imbalance or gain imbalance is carried out iteratively.

7. (Currently Amended) A method for estimation and compensation of phase imbalance or gain imbalance in a receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the method comprising:

estimating the phase imbalance or gain imbalance of an incoming I/Q modulated signal before symbol synchronization using at least one of a first value related to a cross correlation of an uncompensated I component and ~~a~~ an uncompensated Q component of the

modulated signal~~, a second value related to a cross correlation of a compensated I component and a compensated Q component of the modulated signal, and a third value related to a square of the compensated I component and a square of the compensated Q component of the modulated signal~~;

compensating the phase imbalance or gain imbalance such that a feed-forward scheme or a feed-back scheme is established; and

providing estimated and compensated I and Q components of the incoming I/Q modulated signal for symbol synchronization.

8. (Previously Presented) The method according to claim 7, further comprising:

determining at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio, wherein the second ratio is a ratio between a cross correlation of the I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component, and wherein the fourth ratio is a ratio between the mean value of the square of the Q component and the mean value of the square of the I component.

9. (Canceled)

10. (Previously Presented) The method according to claim 7, wherein estimating the phase imbalance or gain imbalance comprises estimating the phase imbalance or gain imbalance iteratively.

11. (Currently Amended) A computer readable storage medium storing instructions that, when executed, estimate or compensate phase imbalance or gain imbalance in a

receiver utilizing a QPSK modulation and a modulation scheme based on complex scrambling code according to a method comprising:

estimating the phase imbalance or gain imbalance before symbol synchronization using at least one of a first value related to a cross correlation of an uncompensated I component and ~~a~~ an uncompensated Q component of an incoming I/Q modulated signal, a second value related to a cross correlation of a compensated I component and a compensated Q component of the modulated signal, and a third value related to a square of the compensated I component and a square of the compensated Q component of the modulated signal; and

providing estimated and compensated I and Q components of the incoming I/Q modulated signal for symbol synchronization.

12. (Currently Amended) A method, comprising:

iteratively compensating a phase imbalance or gain imbalance in a receiver, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the iteratively compensating including:

a) determining an error function on the basis of samples of phase compensated in-phase components and quadrature components of a ~~revived~~ received I/Q modulated signal;

b) filtering the error function;

c) integrating the filtered error function;

d) determining a modified error function by adding the integrated and filtered error function to a product of the integrated and filtered error function and a parameter based on speed and stability;

e) determining a corrected output signal of the I/Q components of the received signal on the basis of subsequent samples of phase compensated in-phase components and quadrature components of the received I/Q modulated signal and the modified error function;

f) returning to step a); and

providing estimated and compensated I and Q components of the received I/Q modulated signal to a symbol synchronizer for synchronization.

13. (Previously Presented) A method, comprising:

iteratively compensating a phase imbalance or gain imbalance in a receiver, the receiver utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code, the iteratively compensating including:

a) determining an error function on the basis of squared samples of phase compensated in-phase components and quadrature components of a received I/Q modulated signal;

b) filtering the error function;

c) integrating the filtered error function;

d) determining a modified error function by adding the integrated and filtered error function to a product of the integrated and filtered error function and a parameter based on speed and stability;

e) determining a gain on the basis of a product of the modified error function and a factor;

f) determining a corrected output signal of the I/Q components of the received signal on the basis of subsequent samples of phase compensated in-phase components and quadrature components of the received I/Q modulated signal and the gain;

g) returning to step a); and

providing estimated and compensated I and Q components of the received I/Q modulated signal to a symbol synchronizer for synchronization.

14. (Previously Presented) The receiver according to claim 1, further comprising means for symbol synchronization which receives the estimated and compensated I and Q components and performs synchronization of the components.

15. (Previously Presented) The receiver according to claim 14, wherein said means for synchronization comprises a Universal Mobile Telecommunications System (UMTS) synchronizer.

16. (Previously Presented) The computer readable storage medium of claim 11, wherein the method further comprises:

determining at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio, wherein the second ratio is a ratio between a cross correlation of the I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component, and wherein the fourth ratio is a ratio between the mean value of the square of the Q component and the mean value of the square of the I component.

17. (Previously Presented) The method of claim 12, wherein determining an error function on the basis of squared samples of phase compensated in-phase components and quadrature components of a received I/Q modulated signal comprises determining the error function using at least one of a first value related to a cross correlation of an I component and a Q component of the received I/Q modulated signal, a second value related to a cross correlation of a compensated I component and a compensated Q component of the modulated signal, and a third value related to a square of the compensated I component and a square of the compensated Q component of the modulated signal.

18. (Previously Presented) The method of claim 12, further comprising:

determining at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio, wherein the second ratio is a ratio between a cross correlation of the I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component, and wherein the fourth ratio is a ratio between the mean value of the square of the Q component and the mean value of the square of the I component.

19. (Previously Presented) The method of claim 13, wherein determining an error function on the basis of squared samples of phase compensated in-phase components and quadrature components of a received I/Q modulated signal comprises determining the error function using at least one of a first value related to a cross correlation of an I component and a Q component of the received I/Q modulated signal, a second value related to a cross correlation of a compensated I component and a compensated Q component of the modulated signal, and a third value related to a square of the compensated I component and a square of the compensated Q component of the modulated signal.

20. (Previously Presented) The method of claim 13, further comprising:

determining at least one first ratio selected from the group consisting of a second ratio, a third ratio and a fourth ratio, wherein the second ratio is a ratio between a cross correlation of the I and Q components of the incoming I/Q modulated signal and a mean value of a square of the I component, wherein the third ratio is a ratio between the cross correlation of the I and Q components and a square root of a product between a mean value of the square of the I component and a mean value of a square of the Q component, and wherein the fourth ratio is a ratio between the mean value of the square of the Q component and the mean value of the square of the I component.